Title: The 2015 NYS Field Crops Weekly Pest Report and Evaluation

Project Leaders:
Ken Wise, Eastern NYS IPM Program Area Educator, Livestock and Field Crops, Cornell University, klw24@cornell.edu
Keith Waldron, NYS IPM Coordinator, Livestock and Field Crops, Cornell University, NYSAES, jkw5@cornell.edu

Cooperators: Cornell Cooperative Field Crop Extension Educators and Faculty

Type of project: Public Education

Project location: New York State

Abstract
The NYS Field Crop Weekly Pest Report provides timely pest information to field crop extension educators and agricultural professionals. The report compiles weekly pest and crop observations collected by field crop extension personnel across NYS. In addition, the weekly report provides a vehicle to disseminate other relevant IPM information such as pest identification, scouting techniques and a calendar with suggestions for pest management activities. The pest report is distributed as a Cornell Cooperative Extension Blog http://blogs.cornell.edu/ipmwpr/. Subscribers (120) to this blog include: Extension Educators, crop consultants, growers, agribusiness, and Cornell University Faculty. We also place the blog link on the NYS IPM facebook page (520 followers) and NYS IPM Field Crops Twitter account (355 followers). Twenty-two issues of the NYS Weekly Pest Report were published in 2015. Extension Educators and crop consultants utilize the Weekly Report as an overview of timely pest information, and have found the report useful in alerting their local clientele regarding pest management issues. Results from an evaluation survey indicate users extended articles from the report to approximately 10,000 individuals by republication in newsletters or forwarding the report on their own list server. Many crop consultants who responded indicated they used pest report information directly with growers.

Background and Justification
The NYS IPM Field Crops Pest Report is designed to inform growers, Extension Educators, crop consultants, agricultural professionals on items of immediate pest management concern and provide a convenient news summary that can also be used in an outreach multiplier capacity with their clientele. The report is a compilation of recent pest observations, potential geographic areas or cropping scenarios affected and the amount and potential significance of observed or anticipated pest infestations. The pest report is short, concise and contains links to pest identification photographs and additional management information. Much of the pest alert information is obtained through a weekly conference call with field crop extension educators.
Extension Educators and crop consultants are responsible for providing their clientele with timely information to help enhance crop and pest management decisions. The report provides educational information that can be used in programming, newsletters, list-serves and outreach efforts. Readers can select the pest information that best fits their county situation and clientele's needs.

The report, now in its 14th year of publication, was developed by the NYS Livestock and Field Crop IPM Program Team with the involvement of field crop extension educators and faculty across NYS. The pest report is distributed electronically through a Cornell Cooperative Extension Blog http://blogs.cornell.edu/ipmwpr/.

Objectives:

1. Provide current pest information to field crop extension educators, crop consultants, growers, agribusiness, and Cornell Faculty on a weekly basis
2. Evaluate the impacts of the weekly pest report

Procedures:

The NYS IPM Program Livestock and Field Crop (LFC) team worked with extension educators to identify timely pest and crop management issues. The LFC team collaborated with Extension Educators and crop consultants from across NYS who shared their local pest and crop observations. The LFC Team prepared the report based on anticipated pest occurrence and feedback on timely field observations. Many of these field observations were communicated by extension educators via a weekly field crop IPM conference call. The report used a concise newsletter format and targeted educational articles. The LFC Team was responsible for developing, compiling and publishing the Weekly Pest Report. Regular features of the weekly report included a view from the field, weather outlook, timely updates on current pest issues such as fusarium head blight, western bean cutworm, growing degree days and alfalfa weevil & black cutworm life stage predictions, livestock pest updates, articles highlighting critical, timely or emerging pest issues and a clipboard checklist highlighting suggested activities for the following week. Photographs and internet links to identification pictures and in-depth management practices were provided within articles when possible.

The information was formatted into the weekly report and shared with clientele via the NYS IPM Weekly Field Crops Pest Report Blog Site http://blogs.cornell.edu/ipmwpr/. The weekly report blog link was also posted on our facebook (https://www.facebook.com/NYSIPM) and twitter pages (https://twitter.com/NYSFieldCropIPM).

At the completion of the growing season, subscribers to the WPR blog were invited to complete a survey to evaluate usefulness and the potential impact of the 2015 NYS Field Crop Weekly Pest Report. The evaluation survey was conducted using google forms on-line survey. An email was sent to subscribers of the blog and on the In-house Cornell Field Crops Staff list-serve and the General Cornell Field Crops list-serve. We did not send notice by twitter or Facebook because many of the followers are not from NY.

Results and Discussion:

This was the 14th season of the Weekly Field Crop Pest Report (WPR). The report moved from a list serve email newsletter to a blog format which allowed an easier, more time-efficient means to post the newsletter, an automated self-subscription feature, automatic archiving and easy article retrieval (http://blogs.cornell.edu/ipmwpr/#). One hundred and eighteen individuals including extension educators, private consultants, agribusiness and growers currently subscribe to the WPR. Twenty-three issues were released this season between May 4 – October 2, 2015. The WPR newsletter template contains several standard sections: a view from the field summarizing pest observations made and shared for that week, a weather forecast for the next week's weather (contributed by the Northeast Climate Center at Cornell), 1 or more timely articles on pests of importance and a weekly checklist of suggested IPM activities for the following week.

Trends In 2015

- Potato Leafhopper has some activity on alfalfa in certain areas of the state that were dry.
- Alfalfa Weevil caused some damage in western NY because of their wet spring. When it is wet it makes it hard to harvest the alfalfa allowing the alfalfa weevil larvae to continue to feed.
- Soybean Aphids populations were high this year but came on after the R5 stage. In some cases

there were 1200/aphids per plant.

- True armyworm was spotty this year with a few issues on corn in the Catskills.
- White mold continues to plagues in soybeans across NYS.
- There were a lot of small grains foliar and head disease issues again this year.
- There was an increase in western bean cutworm populations in NY. In 2013 and 2014 the average number of moth captured per location was 66/trap and increased to 117/trap. It more than double again in 2015 with 266 moths/trap with much of the increase occurring in northern and western NY locations.
- We continued to have late season issues with northern corn leaf blight and gray leaf spot in field corn.

The weekly pest report helped field crop producers and others keep informed on current status of statewide pest issues and provided a forum for detailed discussions on a variety of topics including: updates on the Fusarium Head Blight prediction model and fungicide use decision making (wheat), corn fungicide use considerations, western bean cutworm updates on risk to field corn and dry bean, weed management recommendations and decision making, vertebrate damage to field crops, sharing of timely resources and field monitoring reminders.

The 2015 report contained a total of 120 individual articles addressed 75 different pests that include a wide variety of field crop insects, plant diseases, weeds, and vertebrate pests of concern this past season.

An index of the insect, disease, weed and "other" pest topics that were presented in the 2015 weekly pest report is provided in Appendix1.

Weekly Report Evaluation:
To obtain feedback on the effectiveness of the weekly pest report our users were invited to respond to a online survey questionnaire. Evaluation questions ranged from "How useful was the pest report?" to "What did you like the most about it?" The survey questionnaire can be viewed at: NYS IPM Weekly Field Crops Pest Report Impact Survey. Thirty-nine individuals completed the online survey. Survey responses were very positive indicating satisfaction with the Report's content, format, timeliness, and usefulness as a source of valuable subject matter information for use in additional outreach situations. The following tables and figures summarize responses to survey questions:

Table 1: Responses to "We are interested in your assessment of the usefulness of the following topic items that regularly appeared in the Field Crops IPM Weekly Pest Report."

	Very Useful	Somewhat Useful	Not sure	Not Useful	Not at all useful
The NYS 2015 Weekly Field Crops Pest Report was:	52%	45%	3%	0%	0%
View from the field	67%	29%	4%	0%	0%
Weather Outlook	24%	43%	21%	7%	5%
Weekly Featured article(s)	52%	48%	0%	0%	0%
Pest Images / Photographs	71%	29%	0%	0%	0%
Western Bean Cutworm Update	33%	57%	10%	0%	0%
Growing Degree Days	43%	41%	14%	2%	0%

Clipboard Checklist	33%	45%	19%	3%	0%

Table 2: Responses to by participants on the impacts of the pest report.

	Yes	**No**
Have you used or shared articles from the NYS Weekly Field Crops Pest Report in your newsletters/email list server or social media?	52%	48%

Results from the evaluation survey indicate users extended articles from the report to approximately 10,000 individuals by republication in newsletters or emails. Many extension educators and crop consultants who responded indicated they used pest report information directly with growers. These included: field meetings with growers, one on one contact with growers, as forwarded emails to growers and agribusiness personnel, enhanced personal knowledge of what pest problems are occurring in NYS, and providing a direct internet link from to pest report article topics to related website resources.

Table 3: How do you access or receive the NYS IPM weekly field crops pest report:

Email Field Crops list-serve	95%
NYS IPM Field Crops Pest Report Blog site notice	21%
NYS IPM Field Crops Twitter	5%
NYS IPM Facebook page	5%

Table 4: Demographics on those that use the pest report

Farmer/Producer	12%
Extension Educator	33%
Professional Crop/Farmer Consultant	35%
Government Agricultural Professional	5%
Non-Profit Agricultural Organization	5%
Other	17%

Table 5: Assessing future needs of field crop and livestock cliental: "What online resources would be useful to you?"

N=42	**Very Useful**	**Somewhat Useful**	**Not sure**	**Not Useful**	**Not at all useful**
Short on-line demonstration videos (You Tube) on specific pest issues	49%	34%	15%	0%	2%
Downloadable IPM brochures	51%	39%	7%	3%	0%
Downloadable IPM management pocket guides	54%	34%	12%	0%	0%
Pest images and identification information	83%	17%	0%	0%	0%
IPM Phone Apps	34%	24%	22%	5%	15%
Use Twitter to disseminate IPM information	10%	15%	34%	17%	24%
Use Facebook to disseminate IPM information	15%	10%	30%	19%	26%

Several 2015 pest issues were particularly significant and worthy highlighting:

Highlight 1: Western bean cutworm (WBC) poses risk to corn (field, sweet) and dry bean production. This insect, a native of western US high plains states, was unique to that area until the late 1990's. Since then it's range has expanded eastward and was first detected in NY, PA and Quebec in 2009, CT in 2010 and MA, ME and VT in 2011. The NYS trapping network has revealed western bean cutworms are widely distributed across the state and populations are increasing, posing a potential risk to dry beans and the over 3.5 million acres of corn grown in NY, PA, and VT. We keep clientele informed weekly by having an update in each issue of the pest report.

The NYS trapping network has shown that WBC trap catches have nearly doubled each year. Higher WBC counts have occurred in northern and western NY counties. In 2014, 97 traps collected 11,341 WBC moths, 66% of traps caught less than 100 WBC, total catch per trap ranged from 0 to 1019 moths per trap. In 2015 there was 92 traps that caught an average of 266/WBC trap. Cattaraugus, Chautauqua, Erie, Franklin, Jefferson, Lewis, Wyoming and Yates counties were at or above this average. This was more than double the average from last year. The total catch per trap ranged from 0 to 1688 moths per trap. WBC larvae have been found feeding in sweet and field corn. There were some corn fields in Northern NY that were suspect economic loss. While not thought to be economic at this time these observations signal a need for continued vigilance regarding this new pest. In addition to potential yield losses, WBC injury to corn may pre-dispose ears to infection by fungi including those that can produce mycotoxins.

Highlight II: There were a lot of small grain foliar diseases this year including those affecting wheat, triticale, rye and malting barley. There has been a small grain renaissance across New York. Many farmers are interested in growing malting small grains because of the new NY labeling efforts for local farm brewed beer and distilled whiskeys. Farmers are interesting in the premium they can receive if they can grow good quality malting barley and other grains. It is important to know that malting barley is managed differently than feed barley with very different end quality factors like lower protein in the grain, flavor, plumpness, malting characteristics and more. We are still researching which varieties are best suited for New York including winter hardiness, yield and disease resistance. This season weather conditions were favorable for a number of small grain diseases including: Snow mold, Powdery mildew, Stagonospora nodorum blotch, Fusarium head blight, Net Blotch, Scald and Tan Spot. Fusarium head blight (FHB) is one of the main limiting factors in producing malting barley, wheat and rye in NY. This disease can produce (Deoxynivalenol) DON a mycotoxin that people and other livestock cannot ingest without getting sick. Small grains like wheat, rye and malting barley to be used for malting and flour for bread cannot have more than one part per million of DON. Small grains for malting, like barley, have little resistance to FHB at the moment. There are many faculty and extension educators researching resistant cultivars and other possible management strategies to better manage this disease. Currently, our only good defense for FHB is spraying a fungicide at anthesis (flowering). Many malting winter and spring barley fields that had fusarium head blight this last year did not spray or miss-timed the application of fungicide. On-going research efforts should provide the needed information over time to improve our understanding and integrated management strategies for small grain diseases in NY.

Highlight III: Soybean aphid populations were high on soybeans this year across New York. While there were numbers reaching 1200/per plant in some cases (economic threshold 250/plant) the

populations increased after the R5 stage. After this stage aphid populations do not cause yield losses in soybeans. There were also many predators and parasitoids helping control the aphids.

Highlight IV: Potato leafhopper was found over threshold in many fields this year. There were more fields in Eastern NY than Western. This may be due to the fact it was drier in Eastern NY. Potato leafhopper population increase more rapidly in dry conditions than wet. Many people reported populations that caused yield losses in alfalfa.

Highlight V: Corn and soybean diseases are potential risks each year. It is speculated that the increase in certain corn diseases may be directly attributed to previous crop soil surface residue. Crop residue is left on the surface to protect soil from water erosion, however, residue from corn that was previously infected with disease may still have viable disease inoculum that can infect the next corn crop. Some of the more noteworthy, relatively late season, diseases this and last season were northern corn leaf blight and gray leaf spot. Northern corn leaf blight was found at high levels in many fields in NY, although with not as much associated yield loss and damage as previous years. Gray leaf spot was also found in the Hudson and other river valleys at low to moderate levels. It is possible that the reduced damage and yield loss from these foliar diseases may reflect producers selecting corn hybrids with moderate to highly resistance to gray leaf spot and northern corn leaf blight.

White mold of soybeans occurred at very high levels this year in western NY. Excess moisture this growing season at flowering time was favorable to the proliferation of the disease.
The indeterminate growth habit of soybeans presents a challenge for disease control since the plant continues to flower–producing susceptible infection sites over a period of time. Many growers sprayed a fungicide to suppress the disease; however, many fields still experienced severe infections and issues with white mold control. Collaborating with Gary Bergstrom, Cornell's field crop plant pathologist, we prepared and published timely newsletter articles on the diseases of concern. This information helped enhance grower decisions on regarding control measures.

The weekly pest report (WPR) is distributed on a Cornell Cooperative Extension Blog site http://blogs.cornell.edu/ipmwpr/. Subscribers to this blog include: Extension Educators, crop consultants, growers, agribusiness, agricultural professionals and Cornell University Faculty. We also place the blog link on the NYS IPM facebook page (https://www.facebook.com/NYSIPM) (521 followers) and NYS IPM Field Crops Twitter account (https://twitter.com/NYSFieldCropIPM) (357 followers). Many articles from the report were additionally used in extension newsletters that reached about 10,000 people. We are reaching many growers with critical pest information and alerts weekly in NYS both through extension educators and crop consultants. Many crop consultants are using the pest report information directly with growers. A small percent of growers are starting to use the report directly for in-season pest information. We anticipate an increase in producer use of the WPR as it is being introduced and actively promoted at grower meetings. It is clear that this publication is having an impact with field crop and livestock producers in NYS. The weekly report has been an effective means to share timely Livestock and Field Crop IPM information with clientele including extension personnel, consultants, growers, and others in the agriculture community. We have been pleased with the positive feedback from clientele responding to our end of season survey. For respondent comments see appendix 2.

Samples of materials:

A link to archived NYS IPM Field Crops Pest Reports is available on-line at:
2013 to present: http://blogs.cornell.edu/ipmwpr/
2002 to 2013: http://nysipm.cornell.edu/fieldcrops/tag/pestrpt/default.asp

Key Words: alfalfa, field corn, small grains, soybeans, wheat, insect pests, leaf diseases, pod diseases, root diseases, stalk diseases, stem diseases, weeds, biological control, chemical control, cultural control, demonstration/implementation (TAg), economic analysis, monitoring, research & education, IPM, integrated pest management,

Appendix 1: 2015 Field Crops Weekly Pest Report-Index of Articles

Insects, Mites/Beneficial Organisms/Natural Enemies/Biological Control	**Articles By Dates**
Alfalfa Snout Beetle	
View From the Field	5/8, 5/15, 5/22
Alfalfa Snout Beetle in Fall Alfalfa	9/11
Alfalfa Weevil	
View From the Field	5/15, 5/22, 5/29, 6/5,
Alfalfa Weevil and Growing Degree Days	5/4, 5/8,, 5/15, 5/22, 5/29, 6/11, 6/18
How to Monitor Alfalfa Weevil	5/15
Aphids (other than soybean)	
View From the Field	8/20
Black Cutworm	
View from the Field	5/15, 5/29, 6/11,
Black Cutworm and True Armyworm in NY?	5/4
Black Cutworm in NY?	5/22
Growing Degree Days	5/22, 5/29, 6/5, 6/11, 6/18
Cereal Leaf Beetle	
View From the Field	5/8, 5/15,
Corn Rootworm	
View from the Field	5/29, 7/9, 8/7
Dung Beetles	
Dung Beetles Do What?	7/17
European Corn Borer	
View from the Field	
Crane flies? What's up with that?	
Face Flies	
View From the Field	7/17
Grasshoppers	
View From the Field	8/20
Hessian Fly	
Planting Winter Wheat? What are the Pest Concerns?	8/20
Horn Flies	
View From the Field	7/17
House Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	5/22
Japanese Beetles	
Japanese Beetles in Soybeans	
View From the Field	8/13
Lady Beetles	
View From the Field	9/18
Maize Bill Bug	
Pest or Non-Pest in Early Season Corn	5/29
Mexican Bean Beetle	
View From the Field	8/13
Potato leafhopper	
View From the Field	6/5, 6/18, 6/26, 7/9, 7/17, 7/31, 8/20,
Time to Scout for Potato Leafhopper in Alfalfa!	6/11
Partial Alfalfa Field Harvest Increases PLH risks	7/9
Seed Corn Maggot	
Quantifying Row Crop Plant Populations:	6/5
Soybean Aphids	
View from the Field	6/11, 6/26, 7/24, 7/31, 8/7, 8/13, 8/20, 8/28, 9/4
Scouting Soybean Aphid	7/24

View from the Field	8/20
Frog Eye Leaf Spot	
View from the Field	9/4
Phytophthora Root Rot	
View From the Field	9/4
Northern Stem Canker	
View From the Field	9/11
White Mold	
View From the Field	7/9, 8/28, 9/4
Sclerotinia Stem Rot in Soybeans	8/7
Wheat and Small Grains-Plant Diseases	
Barely Yellow Dwarf	
View From the Field	5/15
Planting Winter Wheat? What are the Pest Concerns?	8/20
Crown Rust of Oats	
View from the Field	6/26
Fusarium head blight	
View from the Field	5/29, 6/11, 6/18, 6/26, 7/9, 7/24, 7/31
Fusarium head blight Update	5/22, 6/5, 6/18, 6/26
How to Recognize Scab (Fusarium head blight) on Wheat	6/18
Glume Blotch	
View from the Field	7/9
Leaf, stem and strip rust	
Early Season Foliar Diseases of Small Grains	5/8,
View From the Field	5/22, 6/26
Net blotch of barley	
View From the Field	6/26
Powdery mildew	
View From the Field	5/8, 7/24
Early Season Foliar Diseases of Small Grains	5/8,
Root Rot	
Planting Winter Wheat? What are the Pest Concerns?	8/20
Scald	
View From the Field	6/18
Seed Rot/Damping off	
Planting Winter Wheat? What are the Pest Concerns?	8/20
Septoria tritici Blotch	
View From the Field	6/18
Snow Mold	
View from the Field	5/4
Spot Blotch	
View from the Field	6/26
Sprouting	
View from the Field	7/9
***Stagonospora nodorum* blotch**	
View from the Field	5/8, 6/18, 7/9
Early Season Foliar Diseases of Small Grains	5/8,
Planting Winter Wheat? What are the Pest Concerns?	8/20
Stored Grain Pests	
Storing grain? Not too early to think about protection from post-harvest insect pests	6/26
Storing grain…Remember Pests!	9/18
Wheat spindle streak mosaic virus	
View From the Field	5/4
Weeds	
Weed Issues	
Palmer amaranth? – Example of an Herbicide Resistant Weed Species.	
Hemp Dogbane	8/20
View From the Field: Horsenettle	5/4
Pest or Non-Pest in Early Season Corn	5/29
Wild Radish	6/5
Livestock pests	
Barn Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	5/22
Pasture Flies	
View From the Field	7/17
Dung Beetles	
Dung Beetles Do What?	7/17
Face Flies	
View From the Field	7/17
Horn Flies	
View From the Field	7/17
House Flies	
Barn Flies? – Early Season Efforts Will Pay Off!	5/22
Stable Flies	
View from the Field	7/17
Barn Flies? – Early Season Efforts Will Pay Off!	5/22
Stable Flies are Here	7/9
Vertebrate and Other	
Pest or Non-Pest in Early Season	5/29

Corn	
Quantifying Row Crop Plant Populations:	6/5
Storing grain? Not too early to think about protection from post-harvest insect pests	6/26
Storing grain…Remember Pests!	9/18

View From the Field: Bird Damage	7/31
Pest Records Help with the Future	9/18
Resistant Varieties – "built in" insurance benefits	9/25

Appendix 2: Responses to questions in the impact survey

Did the NYS IPM Weekly Field Crop Pest Report help with an issue you needed help with?

Keeping informed about pest activity and timing for field scouting
Northern Corn Leaf Blight
No, but it was certainly useful in general.
Yes, to help determine the areas where WBC should be scouted for.
pest ID
Yes
I am not a crop consultant rather nutrient management so I am not integrally involved with field crop pest problems but I read the report every week to stay current on what is going on.
Not specific issue this year, but general professional development.
Yes. During the weeks I was unable to attend the conference call, I found the newsletter to be very helpful. I always include the newsletter link to my newsletters-makes me look good!
Help to promote IPM
The pest report did not directly assist me with a specific issue but the information it provides and the items it recommends to keep an eye on are still very important.
I am recently retired and enjoy keeping up in pest activity and current IPM guidelines.
Yes, allowed me to track what was going on with the growing season and future or possible coming issues.

What did you like most about the NYS IPM Weekly Field Crops Pest Report?

Keeping up to date in real time with Pest Problems that could invade our area
Short enough, yet complete
Summaries of what folks are seeing in the field and reminders on scouting protocols with the links.
pictures what pests are in the wind or coming
Sharing observations with campus and statewide staff. Always an expert to help with a question or problem.
The special articles.
Pest status and identifications
New York State specific
Helps me keep up to date with what is happening in other areas before they hit here
current situations
Timeliness and that it is electronic can pull it up on my I-phone.
It is timely
It is timely

Timeliness
Situational awareness of the regional growing area
Reports from the field

What else would you like to see in the NYS IPM Weekly Field Crops Pest Report?

Cannot think of anything to suggest at this time.
I can't think of anything
I like it as it is. Not sure if it needs anything more.
more photos of pests... a garden orientation rather than a crop producers
I just heard from NYS Ag. Business Assoc. about proposed language by Comm. of Ag and Markets related to pollinators. I have not been following this but don't think most field crop farmers think about pollinator plants before they spray. I told NYSABA that I though more education on this would be good.
Toxicity and effectiveness + or - for different pesticides
I like it the way it is.
Links to what Cornell's Climate Change Center has for farmers if applicable.
More for specialty crops
If you are one of the members that calls in Thursday morning then you have already received much of this
I think up to date reports on where herbicide tolerant weeds have been found would be useful.
I would like links to Ag & IPM related apps